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In the Claims:

Please cancel claims 25 and 38-39.

Please amend claims 1-24 and 26-37 as follows:

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1. (Amended) An isolated nucleic acid molecule comprising a sequence of nucleotides encoding a flavonoid 3'-hydroxylase wherein said flavonoid 3'-hydroxylase effects more efficient hydroxylation of flavonoid compounds in plants than a flavonoid 3'-hydroxylase encoded by the nucleotide sequence set forth in SEQ ID NO: 26.

2. (Amended) The isolated nucleic acid molecule according to claim 1 comprising a nucleotide sequence which maps to the genetic locus designated *Ht1* or *Ht2* in petunia or to loci in other flowering plant species which contain sequences coding for proteins which control production of 3'-hydroxylated flavonoids.

3. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO:1, or has at least about 60% similarity to SEQ ID NO: 1, or hybridizes to SEQ ID NO:1 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

4. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 3, or has at least about 60% similarity to SEQ ID NO: 3, or hybridizes to SEQ ID NO:3 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

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5. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 5, or has at least about 60% similarity to SEQ ID NO: 5, or hybridizes to SEQ ID NO: 5 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

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6. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 7, or has at least about 60% similarity to SEQ ID NO: 7, or hybridizes to SEQ ID NO: 7 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

7. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 9, or has at least about 60% similarity to SEQ ID NO: 9, or hybridizes to SEQ ID NO: 9 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

8. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 14, or has at least about 60% similarity to SEQ ID NO: 14, or hybridizes to SEQ ID NO: 14 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to

about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

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9. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 16, or has at least about 60% similarity to SEQ ID NO: 16, or hybridizes to SEQ ID NO: 16 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

10. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 18, or has at least about 60% similarity to SEQ ID NO: 18, or hybridizes to SEQ ID NO: 18 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

11. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 20, or has at least about 60% similarity to SEQ ID NO: 20, or hybridizes to SEQ ID NO: 20 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

12. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 22, or has at least about 60% similarity to SEQ ID NO: 22, or hybridizes to SEQ ID NO: 22 under low

stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

13. (Amended) The isolated nucleic acid molecule according to claim 2, wherein said nucleic acid molecule comprises a nucleotide sequence as set forth in SEQ ID NO: 24, or has at least about 60% similarity to SEQ ID NO: 24, or hybridizes to SEQ ID NO: 24 under low stringency conditions, wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

14. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 2 or an amino acid sequence having at least about 50% similarity thereto.

15. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 4 or an amino acid sequence having at least about 50% similarity thereto.

16. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 6 or an amino acid sequence having at least about 50% similarity thereto.

17. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid

sequence as set forth in SEQ ID NO: 8 or an amino acid sequence having at least about 50% similarity thereto.

18. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 10 or SEQ ID NO:11 or SEQ ID NO:12 or SEQ ID NO:13 or an amino acid sequence having at least about 50% similarity thereto.

19. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 15 or an amino acid sequence having at least about 50% similarity thereto.

20. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 17 or an amino acid sequence having at least about 50% similarity thereto.

21. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 19 or an amino acid sequence having at least about 50% similarity thereto.

22. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 21 or an amino acid sequence having at least about 50% similarity thereto.

23. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 23 or an amino acid sequence having at least about 50% similarity thereto.

24. (Amended) The isolated nucleic acid molecule according to claim 2 comprising a sequence of nucleotides encoding or complementary to a sequence encoding an amino acid sequence as set forth in SEQ ID NO: 25 or an amino acid sequence having at least about 50% similarity thereto.

26. (Amended) A genetic construct capable of reducing expression of an endogenous gene encoding a flavonoid 3'-hydroxylase in a plant, said genetic construct comprising a nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence encoding the amino acid sequence set forth in one of SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 15, SEQ ID NO: 17, SEQ ID NO: 19, SEQ ID NO: 21, SEQ ID NO: 23, or SEQ ID NO: 25;
- (ii) the nucleotide sequence set forth in one of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 18, SEQ ID NO: 20, SEQ ID NO: 22 or SEQ ID NO: 24, or the coding region in SEQ ID NO: 9;
- (iii) a nucleotide sequence having at least about 60 % similarity to (i) or (ii); and
- (iv) a nucleotide sequence which hybridizes under low stringency conditions to (i), (ii) or (iii) wherein said conditions comprise hybridization at 42°C in about 1% to

about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

27. (Amended) A method for producing a transgenic plant which synthesizes a flavonoid 3'-hydroxylase, said method comprising stably transforming a cell of a plant with a nucleic acid molecule which comprises a sequence of nucleotides encoding said flavonoid 3'-hydroxylase under conditions wherein said nucleic acid molecule is expressed, regenerating a transgenic plant from the cell, and growing said transgenic plant for a time and under conditions wherein the nucleic acid molecule is expressed.

28. (Amended) A method for producing a transgenic plant with reduced endogenous flavonoid 3'-hydroxylase activity, said method comprising stably transforming a cell of a plant with a nucleic acid molecule which comprises a sequence of nucleotides encoding or complementary to a sequence encoding flavonoid 3'-hydroxylase, regenerating a transgenic plant from the cell, and growing said transgenic plant under conditions wherein the nucleic acid molecule is expressed.

29. (Amended) The method according to claim 27 or 28 wherein said nucleic acid molecule comprises a nucleotide sequence or complementary nucleotide sequence selected from:

- (i) a nucleotide sequence encoding the amino acid sequence set forth in one of SEQ ID NO:2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 15, SEQ ID NO: 17, SEQ ID NO: 19, SEQ ID NO: 21, SEQ ID NO: 23, or SEQ ID NO: 25;
- (ii) the nucleotide sequence set forth in one of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 18,

SEQ ID NO: 20, SEQ ID NO: 22 or SEQ ID NO: 24, or the coding region in SEQ ID NO: 9;

- (iii) a nucleotide sequence having at least about 60 % similarity to (i) or (ii); and
- (iv) a nucleotide sequence which hybridizes under low stringency conditions to (i), (ii) or (iii) wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

30. (Amended) The method according to claim 27 or 28 wherein said plant is selected from the group consisting of petunia, carnation, chrysanthemum, rose, snapdragon, tobacco, cornflower, pelargonium, lisianthus, gerbera, apple, iris, lily, African violet and morning glory.

31. (Amended) A method for producing a transgenic plant capable of modulating hydroxylation of flavonoid compounds, said method comprising stably transforming a cell or group of cells of a plant with a nucleic acid molecule comprising a sequence of nucleotides encoding, or complementary to a sequence encoding, flavonoid 3'-hydroxylase, and regenerating a transgenic plant from said cell or group of cells.

32. (Amended) The method according to claim 31 where the transformed nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of:

- (i) a nucleotide sequence encoding the amino acid sequence set forth in one of SEQ ID NO:2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 15, SEQ ID NO: 17, SEQ ID NO: 19, SEQ ID NO: 21, SEQ ID NO: 23, or SEQ ID NO: 25;
- (ii) the nucleotide sequence set forth in one of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 18,

SEQ ID NO: 20, SEQ ID NO: 22 or SEQ ID NO: 24, or the coding region in SEQ ID NO: 9;

- (iii) a nucleotide sequence having at least about 60 % similarity to (i) or (ii); and
- (iv) a nucleotide sequence which hybridizes under low stringency conditions to (i), (ii) or (iii) wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.

33. (Amended) A transgenic plant having tissue exhibiting altered colour, said transgenic plant comprising a nucleic acid molecule comprising a sequence of nucleotides selected from the group consisting of:

- (i) a nucleotide sequence encoding the amino acid sequence set forth in one of SEQ ID NO:2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 15, SEQ ID NO: 17, SEQ ID NO: 19, SEQ ID NO: 21, SEQ ID NO: 23, or SEQ ID NO: 25;
- (ii) the nucleotide sequence set forth in one of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 14, SEQ ID NO: 16, SEQ ID NO: 18, SEQ ID NO: 20, SEQ ID NO: 22 or SEQ ID NO: 24, or the coding region in SEQ ID NO: 9;
- (iii) a nucleotide sequence having at least about 60 % similarity to (i) or (ii); and
- (iv) a nucleotide sequence which hybridizes under low stringency conditions to (i), (ii) or (iii) wherein said conditions comprise hybridization at 42°C in about 1% to about 15% formamide and about 1M to about 2M salt, and washing with about 1M to about 2M salt.